## REMARKS

Claims 1, 2, 10-12, 20-22, and 27 are pending in this application. By this Amendment, claims 28-33 are canceled and claims 1, 10, 11, 21 and 27 are amended. No new matter is added.

Applicant appreciates the courtesies shown to Applicant's representative by Examiner Pappas in the July 10 personal interview. Applicant's separate record of the substance of the interview is incorporated into the following remarks.

### I.     Formal Matters

In the Office Action, claims 28-33 are objected to. By this Amendment, these claims have been canceled and incorporated into independent claims 1, 10, 11, 21 and 27, respectively. The claims as amended remedy the noted antecedent support. Withdrawal of the objection is respectfully requested.

In the Office Action, claims 11, 12, 20, 30, and 31 are rejected under 35 U.S.C. §101 for allegedly being directed to a "carrier wave." Applicant respectfully disagrees.

As discussed during the personal interview, Applicant previously amended claims 11, 12, 20, 30, and 31 to add more specific physical structure to the general "medium" previously claimed. In particular, these claims now recite a "computer readable information storage medium." As discussed, a "carrier wave" is a transmission medium, not a storage medium. That is, while Applicants' page 3 states that a "program" may be embodied in a carrier wave (or within a storage medium), a carrier wave is not a storage medium.

Instead, when read in light of Applicants' specification, it is clear that "computer readable information storage medium" corresponds to physical structure capable of storing the program and corresponds, for example, to various ones of elements 170 (storage section implemented in hardware such as RAM), 172, 174, 178, 180 (computer-readable storage medium such as memory disk, magneto-optical disk, hard disk, magnetic tape, ROM and the

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like) and 194 (portable <u>storage</u> device such as memory card or portable game device) in FIG. 1 and described on pages 3 and 8-9, as well as various elements in FIG. 8 described on page 24, such CD 982 and ROM 950. Additionally, pages 28-29 explicitly recite "information storage medium <u>or memory 1108</u> which has stored information (program or data) for executing the respective means," and further states "information storage medium 1306 such as magnetic disk drive, magnetic tape device, semiconductor memory..." <u>Each</u> of these encompass examples of <u>physical</u> embodiments of information storage media that can <u>store</u> a program as set forth in the claims (as opposed to a carrier wave which merely transmits across a medium to a receiver to be subsequently stored in a tangible form by a separate storage medium). None of these specific examples referring to an information <u>storage</u> means is taught to encompass a carrier wave.

Thus, the claims when properly construed do not encompass a carrier wave. Therefore, as tangible structure is recited, these claims are statutory. Withdrawal of the rejection is respectfully requested.

## II.   <u>Pending Claims 1, 2, 10-12, 20-22 and 27 Define Patentable Subject Matter</u>

In the Office Action, claims 1, 2, 10-12, 20-22 and 27 (presumably also claims 28-33) are rejected under 35 U.S.C. §103(a) over *Computer Graphics: Principles and Practices* to Foley et al. ("Foley") in view of U.S. Patent Application Publication No. 2003/0011618A1 to Deering and U.S. Patent No. 5,990,904 to Griffin. This rejection is respectfully traversed.

As admitted in the Office Action, (1) Foley fails to teach "varying an alpha value of the object so that the object being more distant from the viewpoint becomes more transparent"; (2) Foley and Deering fail to teach "sorting objects of which alpha values are varied so that the objects are drawn in succession starting from an object nearest to the viewpoint and performing hidden-surface erasing based on a Z-buffer process for the objects of which alpha values are varied"; and (3) Foley and Deering fail to teach "varying a depth

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cueing value for each vertex of the object based on a Z-value for each vertex of the object based on the Z-value for each vertex of the object."

As discussed during the previous and current personal interviews, specific processing occurs within the defined depth cueing area, which as previously amended was defined as "part of a viewing volume based on a position of the viewpoint and includes a backward clipping plane of the viewing volume." This feature is supported, for example, by Applicant's page 15, lines 17-20, page 17, lines 13-24 and illustrated by Figs. 2, 3A and 3B. With this, depth cueing and/or alpha value processing is only performed for objects within this narrowly defined depth cueing area, resulting in a reduced processing load while solving problems such as flicker described in Fig. 3A.

In light of the Examiner's comments that "part" does not necessarily exclude use of the entire viewing volume, Applicant has revised the independent claims to specify that the depth cueing area is a partial subset of a viewing volume and that depth cueing or alpha value processing is only performed for objects within the depth cueing area. This is supported, for example, in Fig. 2 and page 17, lines 13-26.

Thus, the subject matter embodied by independent claims 1, 10, 11, 20, 21, and 27 has advantages such as preventing screen flicker while reducing processing load. That is, this specifically defined depth cueing area as a partial subset of the viewing volume is used to assess which objects are varied, sorted or erased.

As discussed, Foley, Deering and Griffin fail to teach or suggest such a feature. The Office Action alleges that Foley teaches to define a finite view volume to limit the number of output primitives through the use of front and back clipping planes. However, this limits the field of view (view volume) and as discussed does not limit the processing of depth cueing to a depth cueing area that is less than the whole view volume. To the extent that a reduction in volume reduces load processing, Foley fails to appreciate that alpha blending and depth

cueing require little, if any, modification to objects near the viewpoint. Therefore, the recited claim feature can prevent processing for objects located substantially near the front of the image, regardless of the size of the viewing volume. Thus, additional load reductions can occur while still achieving a noticeable effect of the depth cueing and alpha processing near the backward clipping plane, such as reduced flicker.

Additionally, the independent claims are amended to include clarified features from dependent claims 28-33 as suggested, in which it is stated that "depth cueing value increases based on an increase in the Z-value" and this "results in the color of the object being brought closer to the target color as the Z-value increases." As discussed, this can reduce flicker by having distant objects close to the target color, such as a distant-most layer or object color.

Griffin merely teaches that to "perform hidden surface removal, the pixel engine 406 compares depth values for incoming pixels...with pixels at corresponding locations in the pixel or fragment buffers. Foley may provide a fog effect that is based on a Z-value. However, as discussed, Z-value increase is not used to make an object closer to a target color as clarified in the independent claims.

Additionally, the Office Action alleges that Griffin teaches sorting of objects so that the objects are drawn in succession starting from an object nearest to the viewpoint and performing hidden-surface erasing based on a Z-buffer process. However, the noted passage on col. 42 of Griffin relate to "color accumulation" computation using a front-to-back or back-to-front approach. This does not explicitly state that objects are drawn in succession from nearest to farthest as claimed.

Accordingly, independent claims 1, 10, 11, 20, 21, and 27 and claims dependent therefrom distinguish over the cited art.

Withdrawal of the rejection is respectfully requested.

## III.   Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance.  Favorable reconsideration and prompt allowance of the pending claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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